

FERNALD PRESERVE - HAMILTON, OHIO

For almost 40 years, the Department of Energy-run **Feed Materials Production Center** at Fernald produced **high-grade uranium-metal products** for the nation's nuclear weapons program. After production stopped in 1989, a clean-up of the site began, which resulted in a **\$4.4 billion clean-up**, one of the largest clean-ups in U.S. history. Today, the **1,050 acre site** is now a **nature preserve** overseen and maintained by the US Department of Energy's Office of Legacy Management.

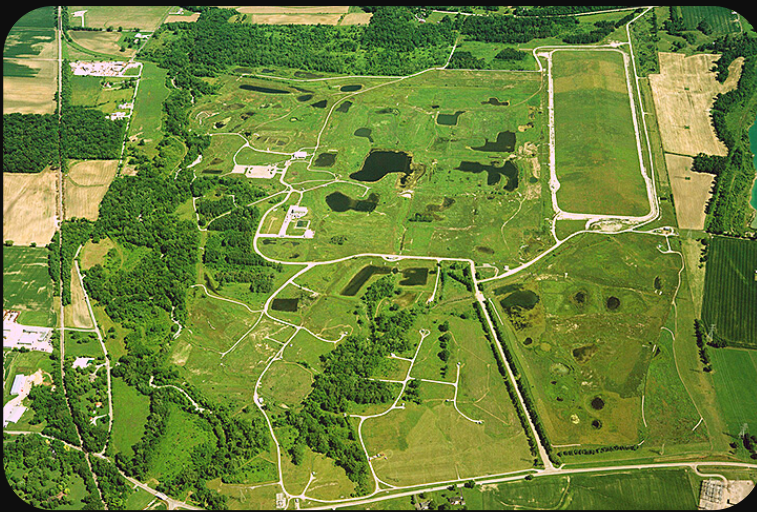


Then - Fernald's Feed Materials Production Center
On-Site Disposal Facility (OSDF)

A large mound on the eastern edge of the preserve called the On-Site Disposal Facility (OSDF) encapsulates **larger volumes of low-level radioactive waste** which were left at Fernald during the clean-up. Higher radioactivity material was shipped to licensed off-site disposal facilities.

Completed in 2006, the OSDF contains almost **3 million cubic yards** of low-level radioactive waste. Approximately 85% of the material is soil and about 15% of it is building debris. The OSDF has a **multi-layer cap and liner system**, as well as an **engineered collection system** that collects liquid draining from the waste and moves it to Fernald's wastewater treatment plant.

The Great Miami Buried Valley Aquifer (GMBVA) underlies the Fernald site, which is an extensive sand and gravel aquifer designated as a Sole Source Aquifer, meaning it is the sole or principle source of drinking water for the area. It is one of the largest sources of drinking water in the US.



Now - Fernald Nature Preserve

At the time that operations ended, the site environmental legacy included:

- 14 million kilograms (31 million pounds) of **nuclear metals**
- Approximately 199,000 m³ (260,000 cubic yards) of **low-level radioactive solid waste**
- 0.9 million metric tons of **waste pit sludge**
- 1.9 million m³ (2.5 million cubic yards) of soils that were impacted by low-level radioactive waste (LLRW) and Resource Conservation Recovery Act (RCRA) hazardous constituents
- **Contaminated groundwater.**

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Converted Advanced Wastewater Treatment Facility (CAWWT)

Uranium contamination and aquifer restoration
With decades of production came uranium contamination to ground water. Levels of uranium in ground water are above USEPA's limit (>30 ppb). At the end of 2013, the contaminated area covered approximately 127 acres.

The current ground water remediation system has 20 extraction wells that draw water from the contaminated aquifer to be treated as needed at Fernald's Converted Advanced Wastewater Treatment Facility (CAWWT). The CAWWT treats some of the water from the ground water extraction wells as well as leachate from the on-site landfill (the OSDF).

Fernald has a regulated discharge to the Great Miami River; treatment ensures that treated water and by-passed (untreated) water does not exceed 600 pounds-per-year uranium.

Treatment ensures blended effluent going to the river does not exceed 30 ppb uranium (monthly flow weighted average).

